CLAIMS

1. A method of combined source-channel decoding of digital data coding discrete values or symbols (i, j, etc.) received by a channel decoder (51) of a digital data decoder (50) from a source (10) over a transmission channel (40), wherein probabilities (p(i), p(i/j)) associated with said symbols are applied to a channel decoding trellis of said channel decoder (51), which method is characterized in that said probabilities are estimated statistically from occurrences of the symbols estimated by said decoder (50).

2. A combined decoding method according to claim 1, characterized in that said probabilities are estimated iteratively.

3. A combined decoding method according to claim 1 or claim 2, characterized in that said probabilities are probabilities (p(i)) of occurrences of the symbols.

4. A combined decoding method according to any one of claims 1 to 3, characterized in that said probabilities are probabilities (p(i/j)) of transitions between the symbols.

5. A combined decoding method according to any one of claims 1 to 4, characterized in that said channel decoder (51) is a convolutional decoder associated with a convolutional channel coder.

6. A combined decoding method according to any one of claims 1 to 5, characterized in that the decoder is a turbodecoder and said channel decoder is an input channel decoder (51) of said turbodecoder.

7. A combined decoding method according to any one of claims 1 to 6, characterized in that said symbols are

coded by variable length codes (VLC) represented by a binary tree of finite size and said probabilities (p(i), p(i/j)) are associated with each branch of said tree and applied to the corresponding stages of said channel decoding trellis.

8. A combined source-channel decoder for digital data, comprising a channel decoder (51) adapted to receive digital data transmitted from a source (10) over a transmission channel (40) and coding discrete values or symbols (i, j, etc.) and probabilities associated with said symbols, which combined decoder (50) is characterized in that it further comprises a generator (54) of histograms of occurrences of the symbols estimated by the decoder (50), means (55) for calculating probabilities (p(i), p(i/j)) associated with said restored symbols, and means (56) for applying said probabilities to a channel decoder trellis of the channel decoder (51).

9. A combined decoder according to claim 8, characterized in that said channel decoding trellis produces binary values ((0, 1) or (-1, 1) considering modulation) and said means for applying said probabilities comprise a module (56) for converting symbol probabilities (p(i), p(i/j)) into probabilities of binary values ((0, 1) or (-1, 1)).

10. A combined decoder according to either claim 8 or claim 9, characterized in that said probabilities are probabilities (p(i)) of occurrences of the symbols.

11. A combined decoder according to any one of claims 8 to 10, characterized in that said probabilities are probabilities (p(i/j)) of transitions between the symbols.

12. A combined decoder according to any one of claims 8 to 11, characterized in that said channel decoder (51) is a convolutional decoder associated with a convolutional channel coder.

13. A combined decoder according to any one of claims 8 to 12, characterized in that the decoder is a turbodecoder and said channel decoder is an input channel decoder (51) of said turbodecoder.

14. A combined decoder according to any one of claims 8 to 13, characterized in that said symbols are coded by variable length codes (VLC) represented by a binary tree of finite size and said probabilities (p(i), p(i/j)) are associated with each branch of said tree and applied to the corresponding stages of said channel decoding trellis.